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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.    | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------|------------------|
| 10/676,730  | 10/01/2003  | Michael A. Bridges   | VANS121762             | 2936             |
| 26389   | 7590        | 10/12/2006           |                        |                  |
| CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC<br>1420 FIFTH AVENUE<br>SUITE 2800<br>SEATTLE, WA 98101-2347 |             |                      |                        |                  |
|   |             |                      | EXAMINER<br>KIM, SUN U |                  |
|   |             |                      | ART UNIT<br>1723       | PAPER NUMBER     |

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/676,730

Applicant(s)

BRIDGES ET AL.

Examiner

John Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 20-22 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-15 is/are allowed.
- 6) ☒ Claim(s) 16-19 and 23-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

This Office Action is in response to the Amendment filed on July 24, 2006.

***Election/Restrictions***

1. Claims 20-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on February 3, 2006.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 23-24 and 27-28 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: a purifier vessel in fluid communication with a dwell chamber.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 16 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Reid, U.S. Patent No. 6,274,038.

Regarding Claim 16, Reid discloses a water purification cartridge, comprising: an inlet member (#18) configured to provide treated water in a first axial direction; a neck (#26) i.e. ring

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member adjacent to the inlet member (#18); a purifier vessel (#38) adjacent to the ring member (#26), wherein the purifier vessel (#38) is configured to treat the untreated water to provide treated water; a lower part of the inlet member (#18) i.e. bulkhead adjacent to the purifier vessel, wherein the bulkhead is configured to separate untreated water from treated water; a dwell chamber (#50) exterior to the purifier vessel wherein the dwell chamber is configured to provide treated water flow in a second axial direction opposite to the first axial direction (see Fig. 1; col. 2, line 54 – col. 4, line 14).

Regarding Claim 19, Reid discloses that the neck (#26) i.e. ring member expands out at lower end to distribute untreated water in a radial direction (see Fig. 1).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claims 17-18 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reid in view of Worley et al, U.S. Patent No. 6,548,054.

Regarding Claims 17-18, Reid discloses that the purifier vessel (#38) contains halogenated resin as biocides (Col. 3, lines 17-28) but does not disclose polystyrene hydantoin or hydantoinylated siloxane. Worley et al teach biocides used for water purification including halogenated polystyrene hydantoin where the halogen is chlorine or bromine (Abstract; Col. 2, line 16 – col. 3, line 65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute halogenated polystyrene hydantoin for halogenated resin of Reid because both are biocides used in water filters.

Regarding Claims 23-24, Reid discloses a water purification cartridge, comprising: a purifier vessel (#38) and a dwell chamber (#50) enclosed within an outer skin (#20) (see Fig.1; col. 2, line 54 – col. 4, line 14). Reid discloses that the purifier vessel (#38) contains halogenated resin as biocides (Col. 3, lines 17-28) but does not disclose a halogenated polystyrene hydantoin or halogenated hydantoinylated siloxane. Worley et al teach biocides used for water purification including halogenated polystyrene hydantoin where the halogen is chlorine or bromine (Abstract; Col. 2, line 16 – col. 3, line 65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute halogenated polystyrene hydantoin for halogenated resin of Reid because both are biocides used in water filters.

Regarding claims 25-28, Reid does not disclose that a polymer having pendant hydantoin groups or halogenated polystyrene hydantoin providing a residual halogen concentration of 0.1 ppm to 0.5 ppm. Reid discloses that the purifier vessel (#38) contains halogenated resin as

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biocides (Col. 3, lines 17-28) but does not disclose a halogenated polystyrene hydantoin or halogenated hydantoinylated siloxane. Worley et al teach biocides used for water purification including halogenated polystyrene hydantoin where the halogen is chlorine or bromine (Abstract; Col. 2, line 16 – col. 3, line 65). Worley et al further teaches that amount of biocidal halogen covalently bonded to the hydantoin rings are controlled depending on the intended application (Col. 4, lines 22-25; Col. 11, line 60 – Col. 12, line 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to discover optimum loading of halogen onto a polymer having pendant hydantoin groups or halogenated polystyrene hydantoin for effective biocidal activity for water purification including claimed residual halogen concentration.

***Allowable Subject Matter***

8. Claims 1-15 are allowed.

***Response to Arguments***

9. Applicant's arguments with respect to Claims 16 and 19 have been considered but are moot in view of the new ground(s) of rejection.

Reid in view of Worley et al teaches the claimed inventions. Reid teaches a dwell passage for biocide imparted to the water is given sufficient time to mix with water to kill microorganisms and other pathogens (see Col. 3, lines 50-55). This teaching counters applicant's argument that hydantoinylated compounds kills microorganisms in a two step approach wherein a microorganisms come into physical contact with the hydantoinylated compounds and then attached halogen slowly migrates into the microorganism and disrupts its

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functioning, thereby effectively killing microorganisms in the dwell chamber of the claimed device.


***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2004/0149642 teaches a water purification cartridge.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is 571-272-1142. The examiner can normally be reached on Monday-Friday 7 a.m. - 3:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Kim can be reached on 571-272-1142. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
**John Kim**  
**Primary Examiner**  
**Art Unit 1723**

JK  
October 4, 2006